

## **The Morning Email: TERM TEDS & Dirty TEDS**

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Want something added? Let me know: [jgoulding@ghco.com](mailto:jgoulding@ghco.com)

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Treasury Futures and Cash				
	Last Decimal	Last 32	Last Yield*	MDuration
ZT	108.6094	108.1950	0.855	1.898
ZF	118.0375	118.0120	1.584	1.584
ZN	123.5781	123.1850	2.285	5.984
2y	99.8500	99.2720	0.950	1.983
5y	100.5625	100.1800	1.755	4.685
10y	100.2031	100.0650	2.726	8.587

Eurodollars (ED)						
	Last Price	Last Imp Yield	Days til Expr.	Fraction of year	Month	
EDAM09	98.7550	1.245	82	0.2240	JUN	
EDAU09	98.7600	1.240	173	0.4733	SEP	White Pack
EDAZ09	98.6000	1.400	264	0.7226	DEC	
EDAH10	98.5500	1.450	355	0.9719	MAR	
EDAM10	98.3850	1.615	446	1.2212	JUN	
EDAU10	98.2100	1.790	537	1.4706	SEP	Red Pack
EDAZ10	98.0000	2.000	628	1.7199	DEC	
EDAH11	97.8550	2.145	719	1.9692	MAR	
EDAM11	97.6450	2.355	810	2.2185	JUN	
EDAU11	97.4500	2.550	908	2.4870	SEP	Green Pack
EDAZ11	97.2400	2.760	999	2.7363	DEC	
EDAH12	97.1150	2.885	1,090	2.9856	MAR	
EDAM12	97.0150	2.985	1,181	3.2349	JUN	
EDAU12	96.9250	3.075	1,272	3.4843	SEP	Blue Pack
EDAZ12	96.8050	3.195	1,363	3.7336	DEC	
EDAH13	96.8200	3.180	1,454	3.9829	MAR	
EDAM13	96.7550	3.245	1,545	4.2322	JUN	
EDAU13	96.6950	3.305	1,636	4.4815	SEP	Gold Pack
EDAZ13	96.6000	3.400	1,727	4.7308	DEC	
EDAH14	96.5600	3.440	1,818	4.9801	MAR	

	Last Yield	Net Yield	Last Price	
White Pack	1.357	-2.125	9866.63	Pack Prices
Red Pack	1.923	-3.000	9811.25	
Green Pack	2.692	-5.125	9736.25	
Blue Pack		-3.375	9689.00	
Gold Pack		0.000	9664.00	

Red pack is a 2yr proxy  
 Gold pack is a 10yr proxy  
 Red /Gold is a 2/10 proxy  
 Blue pack is a 5yr proxy  
 Blue/Gold is a 5/10 proxy

**Notes**

\* Futures use CTD for Last Yield

IF : '#VALUE!', then, no quote being provided by exchange.

If color of cell is orange, it's simply a 'note' for me.

**How many ways can you hedge the TED? Let me count...there's lots and lots, like:**

- 1 Regression
  - 2 Engineered
  - 3 Strip with and without Stubs
  - 4 Convexity Bias
  - 5 Weighted
  - 6 Unweighted
- and more...

Most of us are interested in the *unweighted hedge* which is simply a curve trade hedge. There are so many ways to hedge the TED trade that I can't possibly list them all.

If you email me and ask for a specific hedge, I'll get it to you.

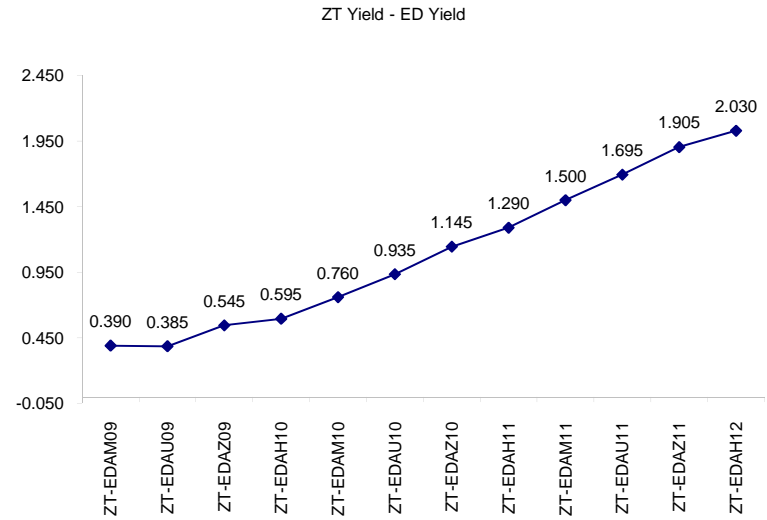
[jgoulding@ghco.com](mailto:jgoulding@ghco.com)

#### **Correlations (Important)**

Correlations for the US Cash Treasuries are done on a YIELD basis. Therefore, you'll see negative values. The reason for this is due to the new issues. Every new issue takes too long to 'catch up' because the correlation formula looks back 10days. So, it's much easier to formulate the correlations based on yield than price.

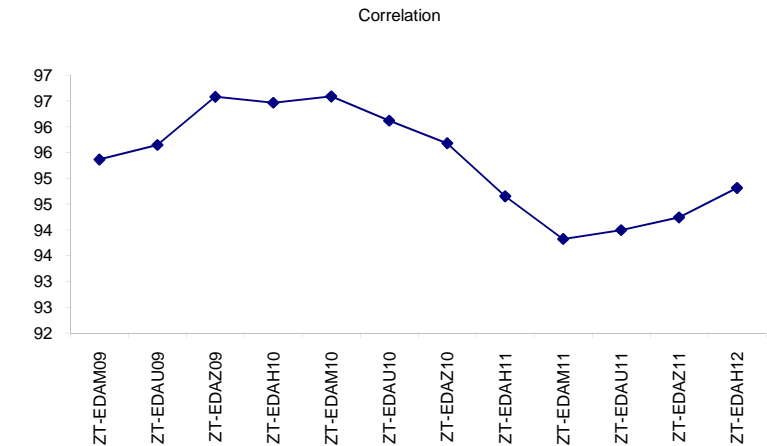
	ZT			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAM09	9.85	0.390	ZT-EDAM09	95
EDAU09	9.85	0.385	ZT-EDAU09	96
EDAZ09	10.01	0.545	ZT-EDAZ09	97
EDAH10	10.06	0.595	ZT-EDAH10	96
EDAM10	10.22	0.760	ZT-EDAM10	97
EDAU10	10.40	0.935	ZT-EDAU10	96
EDAZ10	10.61	1.145	ZT-EDAZ10	96
EDAH11	10.75	1.290	ZT-EDAH11	95
EDAM11	10.96	1.500	ZT-EDAM11	94
EDAU11	11.16	1.695	ZT-EDAU11	94
EDAZ11	11.37	1.905	ZT-EDAZ11	94
EDAH12	11.49	2.030	ZT-EDAH12	95

Price = Outright Decimal Price - Euro Contract Price  
 Yield = ABS (Proxy Yield - Implied Euro Contract yield)  
 \*Correlation = ED Correlation to Treasury Future over 10 days



	ED Duration as Fraction of year			ZT Duration	Spread Duration	
EDAM09	0.2240	1.8982	1.6742	ZT-EDAM09		
EDAU09	0.4733	1.8982	1.4249	ZT-EDAU09		
EDAZ09	0.7226	1.8982	1.1756	ZT-EDAZ09		
EDAH10	0.9719	1.8982	0.9263	ZT-EDAH10		
EDAM10	1.2212	1.8982	0.6770	ZT-EDAM10		
EDAU10	1.4706	1.8982	0.4276	ZT-EDAU10		
EDAZ10	1.7199	1.8982	0.1783	ZT-EDAZ10		
EDAH11	1.9692	1.8982	-0.0710	ZT-EDAH11		
EDAM11	2.2185	1.8982	-0.3203	ZT-EDAM11		
EDAU11	2.4870	1.8982	-0.5888	ZT-EDAU11		
EDAZ11	2.7363	1.8982	-0.8381	ZT-EDAZ11		
EDAH12	2.9856	1.8982	-1.0874	ZT-EDAH12		

The farther away from 0 the spread duration is the riskier the trade.



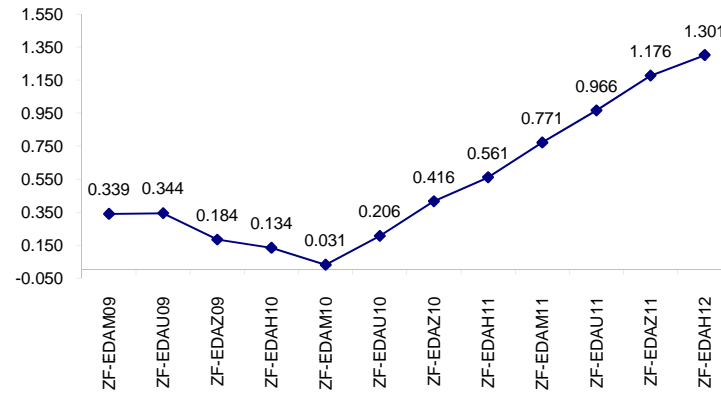
	ZF			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAM09	19.28	0.339	ZF-EDAM09	96
EDAU09	19.28	0.344	ZF-EDAU09	97
EDAZ09	19.44	0.184	ZF-EDAZ09	97
EDAH10	19.49	0.134	ZF-EDAH10	97
EDAM10	19.65	0.031	ZF-EDAM10	97
EDAU10	19.83	0.206	ZF-EDAU10	97
EDAZ10	20.04	0.416	ZF-EDAZ10	96
EDAH11	20.18	0.561	ZF-EDAH11	95
EDAM11	20.39	0.771	ZF-EDAM11	94
EDAU11	20.59	0.966	ZF-EDAU11	94
EDAZ11	20.80	1.176	ZF-EDAZ11	94
EDAH12	20.92	1.301	ZF-EDAH12	94

Price = Outright Decimal Price - Euro Contract Price

Yield = ABS (Proxy Yield - Implied Euro Contract yield)

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ZF Yield - ED Yield

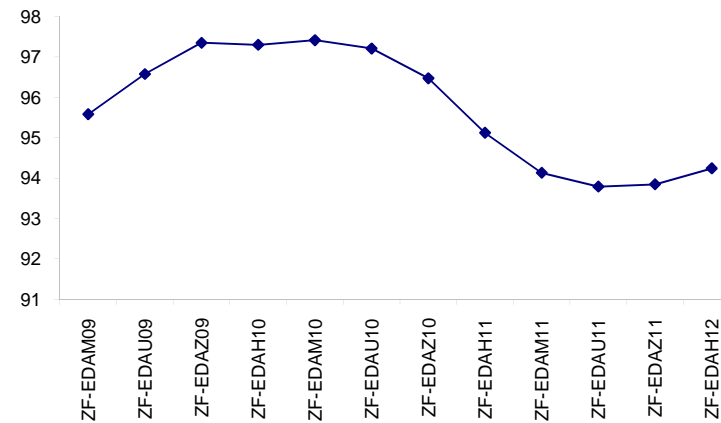


ED Duration as

	Fraction of year	ZF Duration	Spread Duration	
EDAM09	0.2240	1.5839	1.3599	ZF-EDAM09
EDAU09	0.4733	1.5839	1.1106	ZF-EDAU09
EDAZ09	0.7226	1.5839	0.8613	ZF-EDAZ09
EDAH10	0.9719	1.5839	0.6119	ZF-EDAH10
EDAM10	1.2212	1.5839	0.3626	ZF-EDAM10
EDAU10	1.4706	1.5839	0.1133	ZF-EDAU10
EDAZ10	1.7199	1.5839	-0.1360	ZF-EDAZ10
EDAH11	1.9692	1.5839	-0.3853	ZF-EDAH11
EDAM11	2.2185	1.5839	-0.6346	ZF-EDAM11
EDAU11	2.4870	1.5839	-0.9031	ZF-EDAU11
EDAZ11	2.7363	1.5839	-1.1524	ZF-EDAZ11
EDAH12	2.9856	1.5839	-1.4018	ZF-EDAH12

The farther away from 0 the spread duration is the riskier the trade.

Correlation

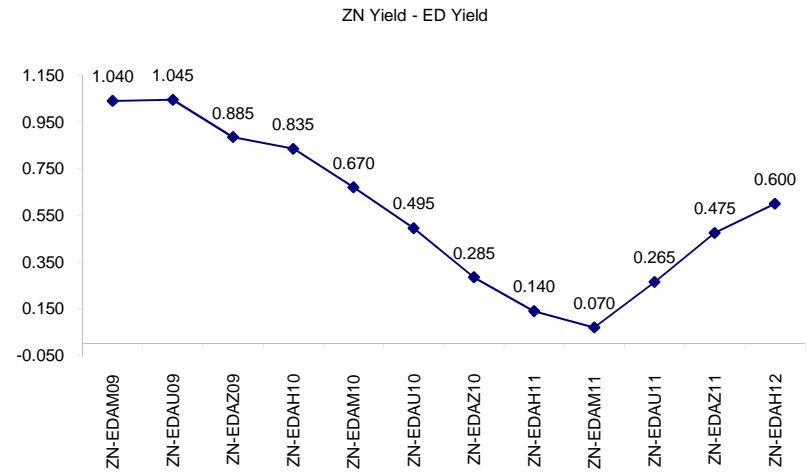


	ZN			Correlation* (percent)
	Spread Price	Spread Yield	Spread Name	
EDAM09	24.82	1.040	ZN-EDAM09	96
EDAU09	24.82	1.045	ZN-EDAU09	97
EDAZ09	24.98	0.885	ZN-EDAZ09	98
EDAH10	25.03	0.835	ZN-EDAH10	98
EDAM10	25.19	0.670	ZN-EDAM10	98
EDAU10	25.37	0.495	ZN-EDAU10	98
EDAZ10	25.58	0.285	ZN-EDAZ10	98
EDAH11	25.72	0.140	ZN-EDAH11	97
EDAM11	25.93	0.070	ZN-EDAM11	96
EDAU11	26.13	0.265	ZN-EDAU11	96
EDAZ11	26.34	0.475	ZN-EDAZ11	96
EDAH12	26.46	0.600	ZN-EDAH12	97

Price = Outright Decimal Price - Euro Contract Price

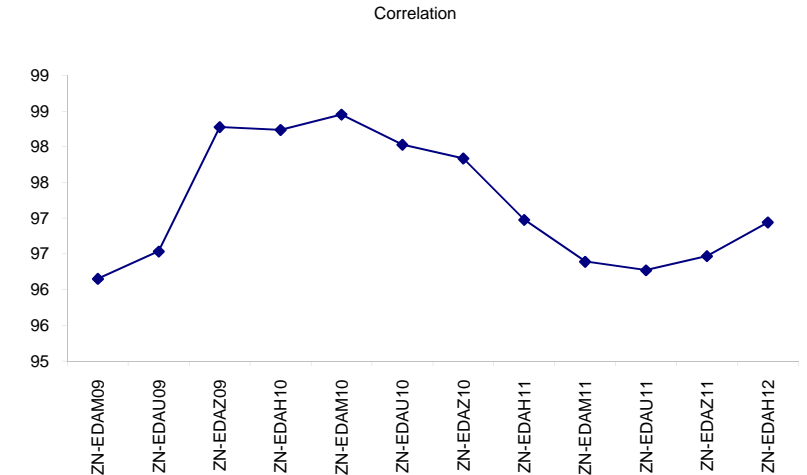
Yield = ABS (Proxy Yield - Implied Euro Contract yield)

\*Correlation = ED Correlation to Treasury Future over 10 days



	ED Duration as			ZN Spread Duration
	Fraction of year	ZN Duration	Spread Duration	
EDAM09	0.2240	5.9842	5.7602	ZN-EDAM09
EDAU09	0.4733	5.9842	5.5109	ZN-EDAU09
EDAZ09	0.7226	5.9842	5.2616	ZN-EDAZ09
EDAH10	0.9719	5.9842	5.0122	ZN-EDAH10
EDAM10	1.2212	5.9842	4.7629	ZN-EDAM10
EDAU10	1.4706	5.9842	4.5136	ZN-EDAU10
EDAZ10	1.7199	5.9842	4.2643	ZN-EDAZ10
EDAH11	1.9692	5.9842	4.0150	ZN-EDAH11
EDAM11	2.2185	5.9842	3.7657	ZN-EDAM11
EDAU11	2.4870	5.9842	3.4972	ZN-EDAU11
EDAZ11	2.7363	5.9842	3.2479	ZN-EDAZ11
EDAH12	2.9856	5.9842	2.9985	ZN-EDAH12

The farther away from 0 the spread duration is the riskier the trade.



	2y			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAM09	1.10	0.295	2y-EDAM09	-91
EDAU09	1.09	0.290	2y-EDAU09	-89
EDAZ09	1.25	0.450	2y-EDAZ09	-90
EDAH10	1.30	0.500	2y-EDAH10	-90
EDAM10	1.47	0.665	2y-EDAM10	-91
EDAU10	1.64	0.840	2y-EDAU10	-91
EDAZ10	1.85	1.050	2y-EDAZ10	-90
EDAH11	2.00	1.195	2y-EDAH11	-87
EDAM11	2.21	1.405	2y-EDAM11	-86
EDAU11	2.40	1.600	2y-EDAU11	-86
EDAZ11	2.61	1.810	2y-EDAZ11	-87
EDAH12	2.74	1.935	2y-EDAH12	-88

Price = Outright Decimal Price - Euro Contract Price

Yield = ABS (Proxy Yield - Implied Euro Contract yield)

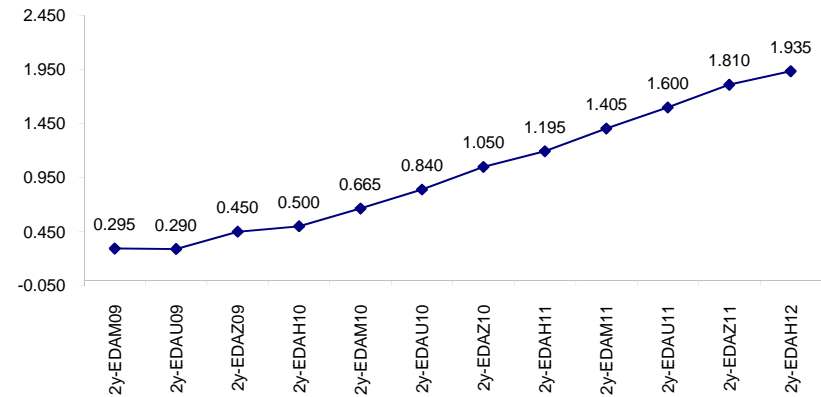
\*Correlation = ED Correlation to Treasury Future over 10 days.

ED Duration as

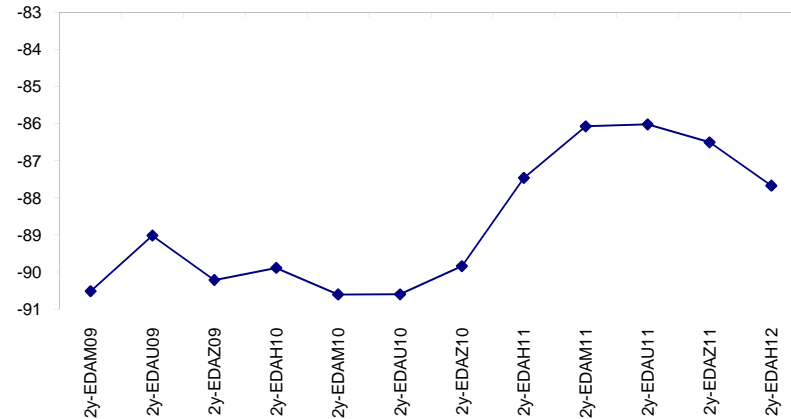
	Fraction of year	2Y Duration	Spread Duration	
EDAM09	0.2240	1.9826	1.7586	2y-EDAM09
EDAU09	0.4733	1.9826	1.5093	2y-EDAU09
EDAZ09	0.7226	1.9826	1.2600	2y-EDAZ09
EDAH10	0.9719	1.9826	1.0107	2y-EDAH10
EDAM10	1.2212	1.9826	0.7614	2y-EDAM10
EDAU10	1.4706	1.9826	0.5121	2y-EDAU10
EDAZ10	1.7199	1.9826	0.2627	2y-EDAZ10
EDAH11	1.9692	1.9826	0.0134	2y-EDAH11
EDAM11	2.2185	1.9826	-0.2359	2y-EDAM11
EDAU11	2.4870	1.9826	-0.5044	2y-EDAU11
EDAZ11	2.7363	1.9826	-0.7537	2y-EDAZ11
EDAH12	2.9856	1.9826	-1.0030	2y-EDAH12

The farther away from 0 the spread duration is the riskier the trade.

ZT Yield - ED Yield

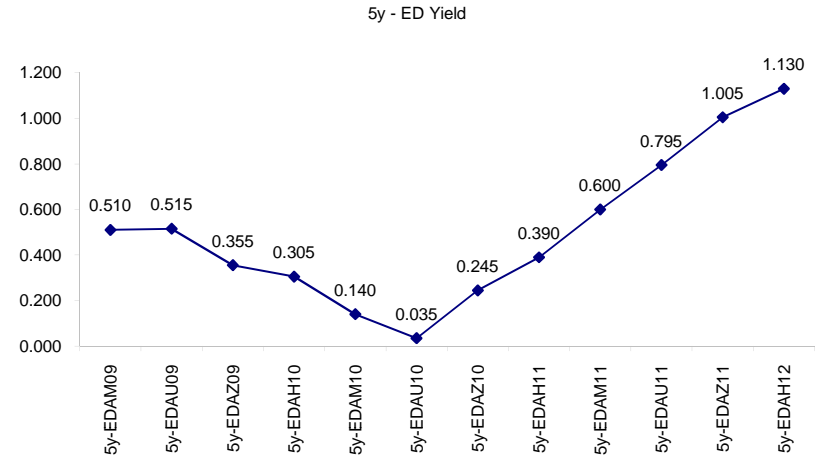


Correlation



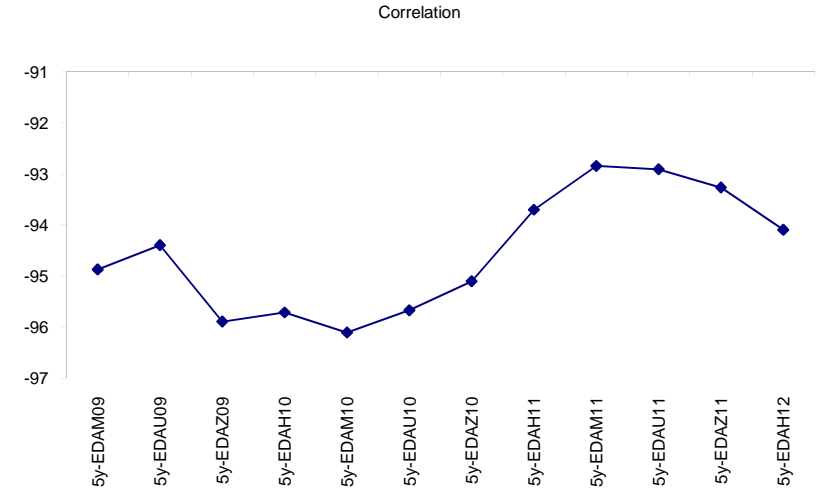
	5y			
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAM09	1.81	0.510	5y-EDAM09	-95
EDAU09	1.80	0.515	5y-EDAU09	-94
EDAZ09	1.96	0.355	5y-EDAZ09	-96
EDAH10	2.01	0.305	5y-EDAH10	-96
EDAM10	2.18	0.140	5y-EDAM10	-96
EDAU10	2.35	0.035	5y-EDAU10	-96
EDAZ10	2.56	0.245	5y-EDAZ10	-95
EDAH11	2.71	0.390	5y-EDAH11	-94
EDAM11	2.92	0.600	5y-EDAM11	-93
EDAU11	3.11	0.795	5y-EDAU11	-93
EDAZ11	3.32	1.005	5y-EDAZ11	-93
EDAH12	3.45	1.130	5y-EDAH12	-94

Price = Outright Decimal Price - Euro Contract Price  
 Yield = ABS (Proxy Yield - Implied Euro Contract yield)  
 \*Correlation = ED Correlation to Treasury Future over 10 days



	ED Duration as Fraction of year		5Y Duration	Spread Duration	
EDAM09	0.2240	4.6851	4.4611	5y-EDAM09	
EDAU09	0.4733	4.6851	4.2118	5y-EDAU09	
EDAZ09	0.7226	4.6851	3.9625	5y-EDAZ09	
EDAH10	0.9719	4.6851	3.7131	5y-EDAH10	
EDAM10	1.2212	4.6851	3.4638	5y-EDAM10	
EDAU10	1.4706	4.6851	3.2145	5y-EDAU10	
EDAZ10	1.7199	4.6851	2.9652	5y-EDAZ10	
EDAH11	1.9692	4.6851	2.7159	5y-EDAH11	
EDAM11	2.2185	4.6851	2.4666	5y-EDAM11	
EDAU11	2.4870	4.6851	2.1981	5y-EDAU11	
EDAZ11	2.7363	4.6851	1.9488	5y-EDAZ11	
EDAH12	2.9856	4.6851	1.6994	5y-EDAH12	

The farther away from 0 the spread duration is the riskier the trade.

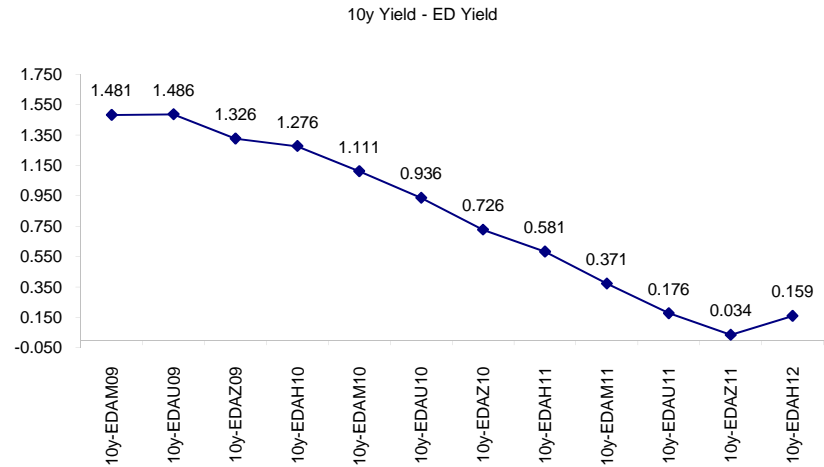


10y				
	Spread Price	Spread Yield	Spread Name	Correlation* (percent)
EDAM09	1.81	1.481	10y-EDAM09	-94
EDAU09	1.80	1.486	10y-EDAU09	-94
EDAZ09	1.96	1.326	10y-EDAZ09	-96
EDAH10	2.01	1.276	10y-EDAH10	-96
EDAM10	2.18	1.111	10y-EDAM10	-97
EDAU10	2.35	0.936	10y-EDAU10	-96
EDAZ10	2.56	0.726	10y-EDAZ10	-96
EDAH11	2.71	0.581	10y-EDAH11	-95
EDAM11	2.92	0.371	10y-EDAM11	-95
EDAU11	3.11	0.176	10y-EDAU11	-94
EDAZ11	3.32	0.034	10y-EDAZ11	-95
EDAH12	3.45	0.159	10y-EDAH12	-95

Price = Outright Decimal Price - Euro Contract Price

Yield = ABS (Proxy Yield - Implied Euro Contract yield)

\*Correlation = ED Correlation to Treasury Future over 10 days



ED Duration as Fraction of year				10Y Duration	Spread Duration	
EDAM09	0.2240	8.5873	8.3633	10y-EDAM09		
EDAU09	0.4733	8.5873	8.1140	10y-EDAU09		
EDAZ09	0.7226	8.5873	7.8647	10y-EDAZ09		
EDAH10	0.9719	8.5873	7.6153	10y-EDAH10		
EDAM10	1.2212	8.5873	7.3660	10y-EDAM10		
EDAU10	1.4706	8.5873	7.1167	10y-EDAU10		
EDAZ10	1.7199	8.5873	6.8674	10y-EDAZ10		
EDAH11	1.9692	8.5873	6.6181	10y-EDAH11		
EDAM11	2.2185	8.5873	6.3688	10y-EDAM11		
EDAU11	2.4870	8.5873	6.1003	10y-EDAU11		
EDAZ11	2.7363	8.5873	5.8510	10y-EDAZ11		
EDAH12	2.9856	8.5873	5.6016	10y-EDAH12		

The farther away from 0 the spread duration is the riskier the trade.

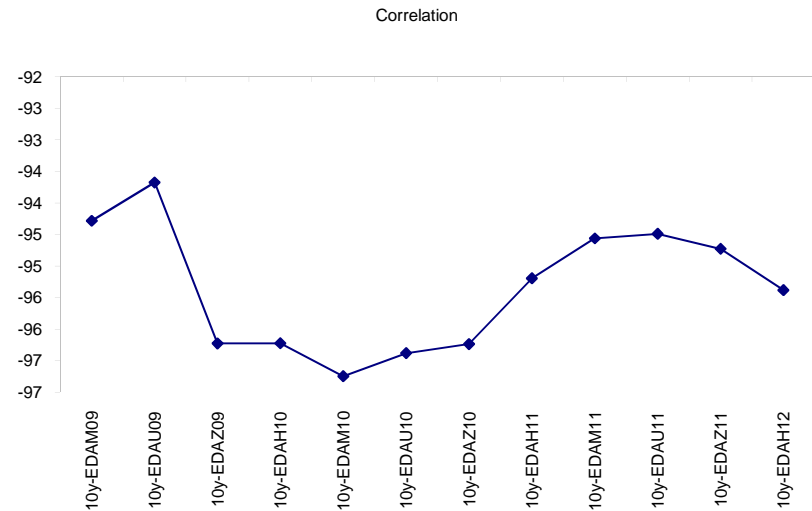


Chart values show the differences between ED contract and Treasury Futures contract. Those values can be seen in the table at the bottom of the chart. Each cash treasury is then plotted on the chart to compare differences in the durations and basis point values.

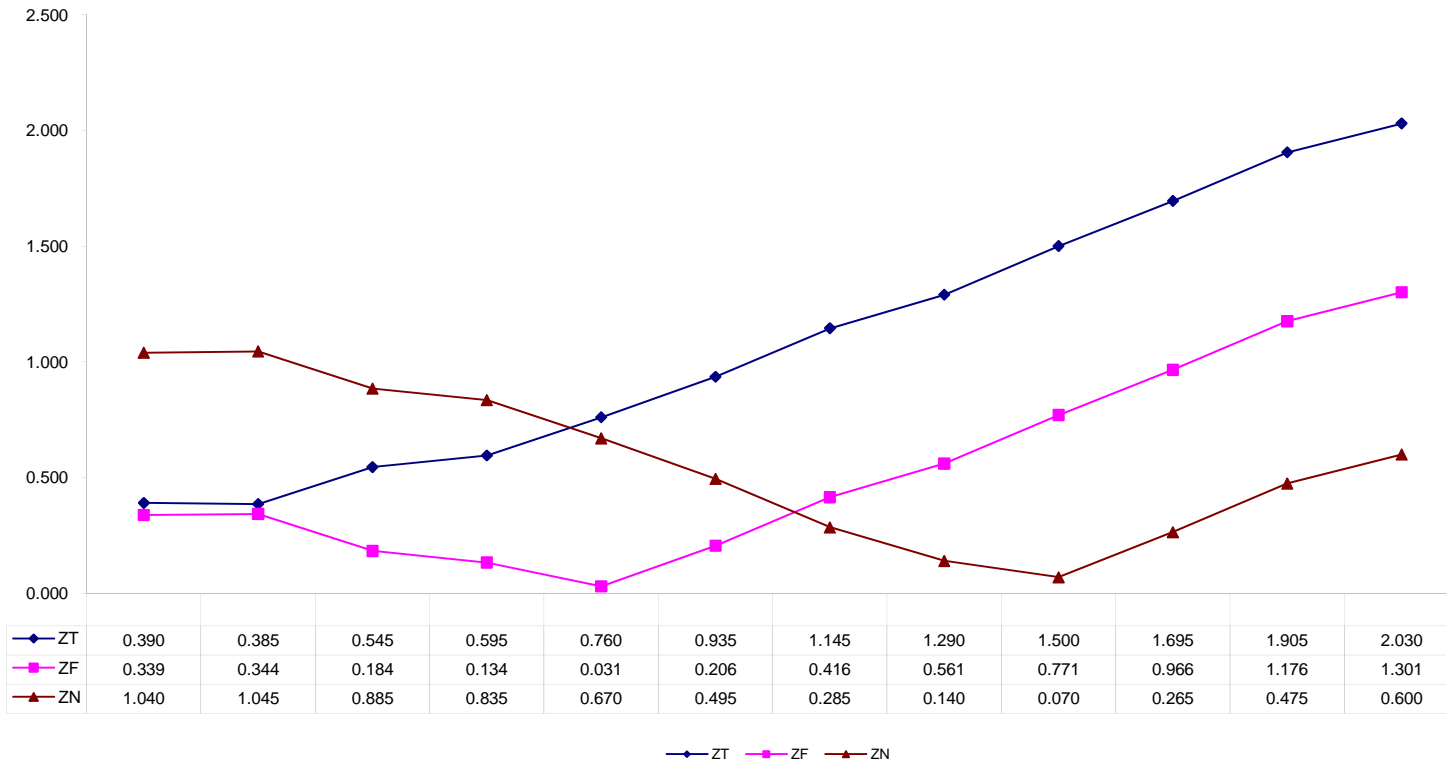
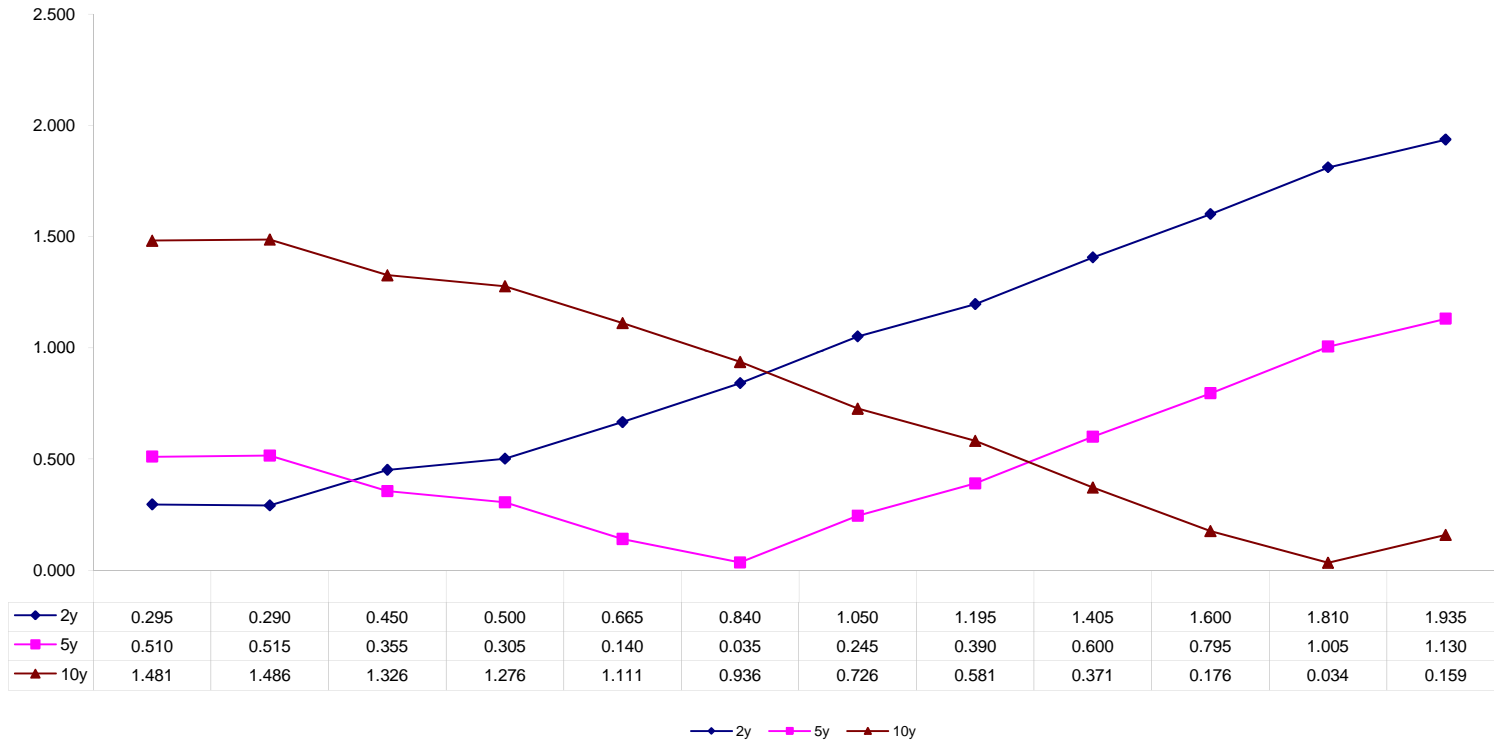
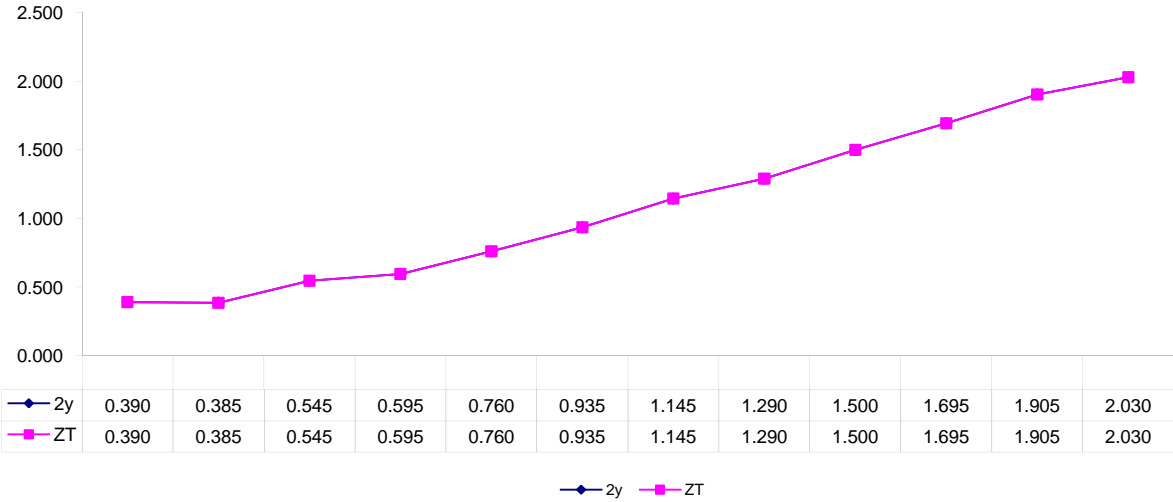
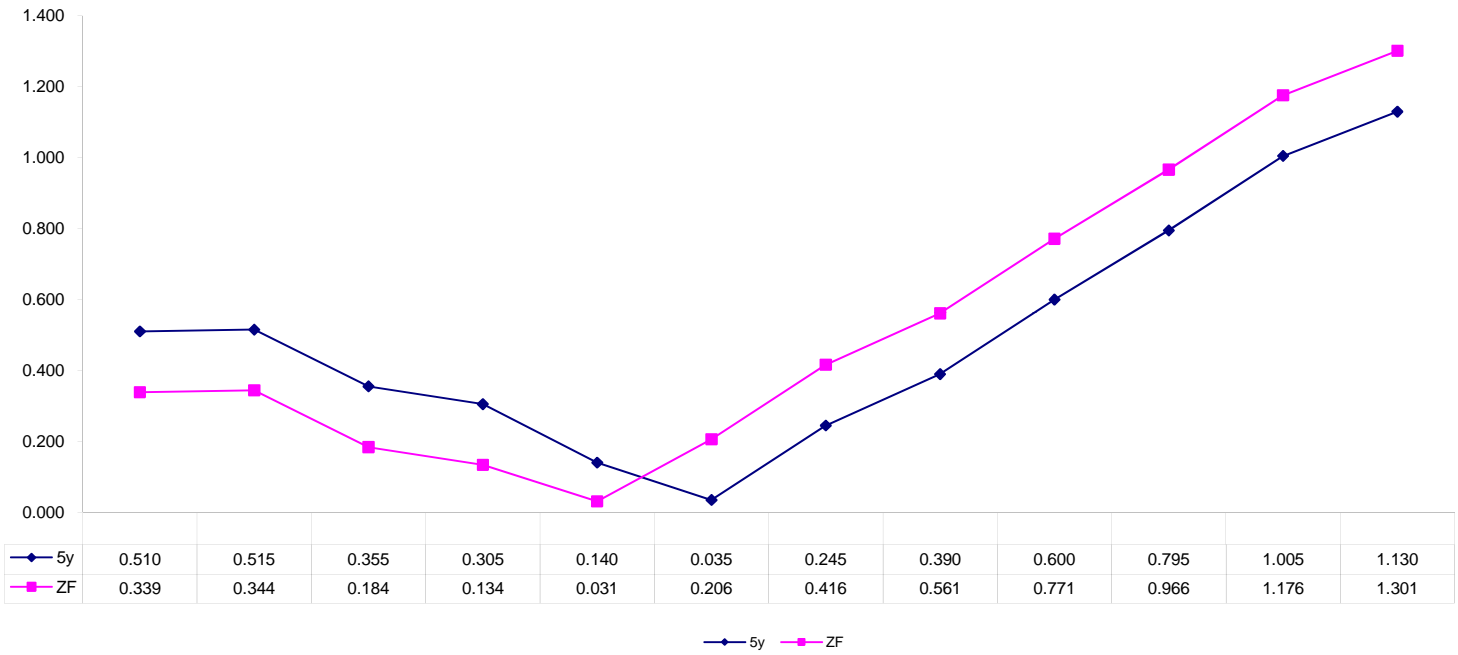


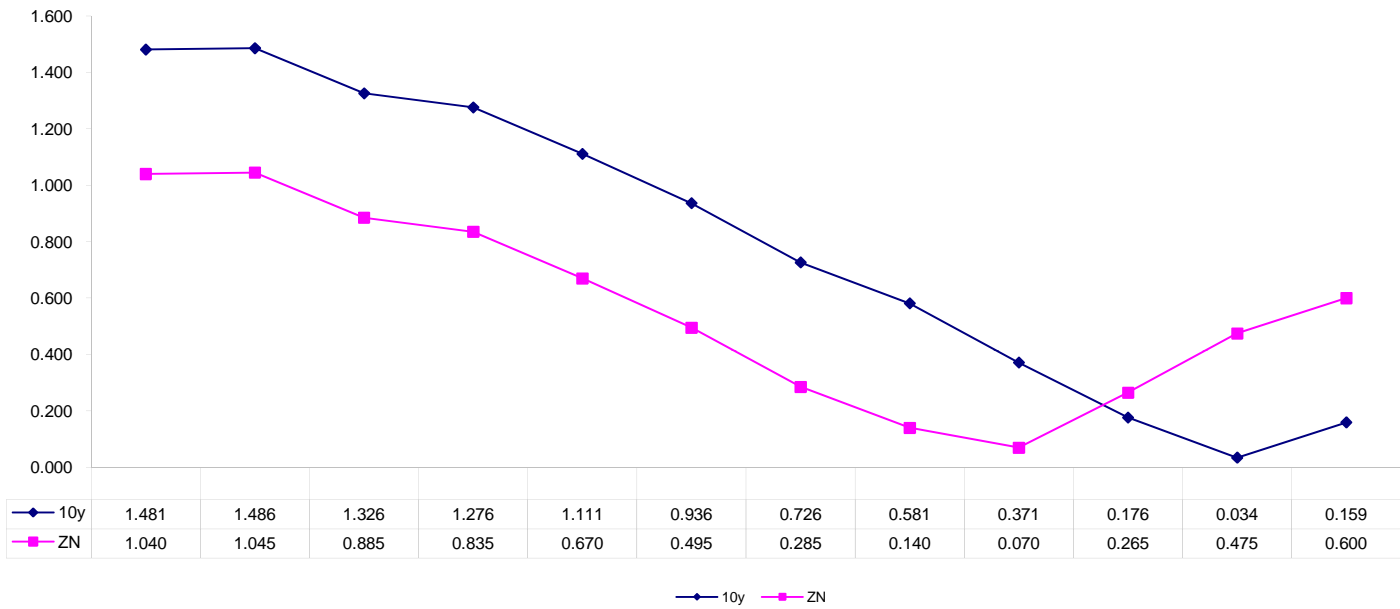
Chart values show the differences between ED contract and Treasury Cash contract. Those values can be seen in the table at the bottom of the chart. Each cash treasury is then plotted on the chart to compare differences in the durations and basis point values.



2y Basis TED Curve







	Last Yield	Net Last Yield	Last Price
White Pack	1.357	-2.125	9866.6250
Red Pack	1.923	-3.000	9811.2500
Green Pack	2.692	-5.125	9736.2500
Blue Pack		-3.375	9689.0000
Gold Pack		0.000	9664.0000

